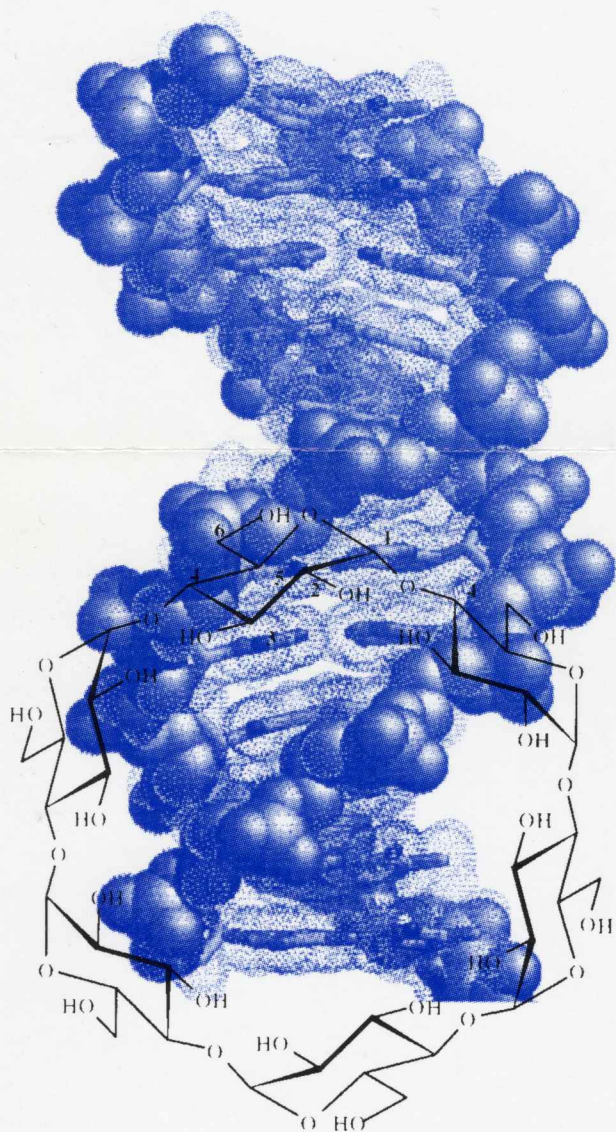


Graduate Studies in Chemistry & Biochemistry



S C H O O L O F

Graduate Studies



Concordia
UNIVERSITY

real
education
for the real world

Graduate Programs in Chemistry and Biochemistry

The MSc Program

The admission requirement is an honors degree in Chemistry, Biochemistry or its equivalent. Qualified applicants lacking prerequisite courses may be required to take up to two such courses in addition to their regular graduate program. Applicants with deficiencies in their undergraduate preparation may be required to complete a qualifying program. Candidates for the MSc degree may register on either a full-time or part-time basis, and courses will be offered in the late afternoon or evening when necessary to accommodate students who are employed during the day. Applications received by March 31 will receive priority consideration.

The PhD Program

The normal requirement for admission is an MSc degree in Chemistry or Biochemistry with high standing from a recognized university. Comparable qualifications in Biology are also acceptable for applicants wishing to complete graduate studies in Biochemistry. Outstanding students who have maintained a grade point average of greater than 3.5 in their last 2 years of study and those with external scholarships (NSERC, MRC, FCAR) may also apply to the PhD program directly (fast-tracking) from their BSc program. Applications received by March 31 will receive priority consideration.

The Graduate CO-OP Program

It is possible to carry out both MSc and PhD studies on a CO-OP basis with the collaboration of an employer. CO-OP graduate studies are arranged as a form of part-time program where the student conducts research of interest to the employer, normally in the employer's laboratory, but directs the project toward a thesis topic acceptable to the Department at Concordia and under the guidance of an academic supervisor in the Department.

Tuition Fees and Financial Support

Tuition Fees* ('96-'97)

Canadians and students with permanent resident status \$55.43 per credit

International students \$248.43 per credit

* Tuition fees are set by the Provincial Government of Quebec and are subject to periodic change.

Assuming students spend two years in the MSc program (45 credits) or 4 years in the PhD program (90 credits), the average annual tuition fee for Canadians would be approximately \$1,500.00 and approximately \$5,500.00 for International students. Certain International students may be eligible to pay the same fees as Canadians: for more information, contact the Department of Chemistry and Biochemistry or the Faculty of Graduate Studies. All full-time graduate students (excluding CO-OP students) in the Department of Chemistry and Biochemistry will receive a minimum of \$13,000.00 per annum in the form of research and teaching stipends. These are guaranteed for the normal period needed to complete the MSc and PhD degrees. Concordia University also provides internal scholarships and tuition fee remissions (International students) awarded on a competitive basis to exceptional graduate students. Students indicate at the time of their application if they wish to be considered for an award. Students entering the PhD program with external funding (NSERC, MRC, FCAR) are entitled to a Concordia University External Award Holders Doctoral Fellowship in addition to their external award.

Research in the Department of Chemistry and Biochemistry

Students enrolling in either the MSc or PhD program will find a research-oriented Department, faculty members with international reputations in their fields, and laboratory facilities that are in some cases unique in Canada. The Department is particularly strong in research areas at the interface between chemistry and biochemistry/biology, including bioanalytical chemistry, bioinorganic chemistry, bioorganic chemistry, physical organic chemistry and biochemistry. Other areas of strength include physical inorganic chemistry and new inorganic materials. External funding for research currently reaches an annual level in excess of one million dollars. Among the state-of-the-art facilities accessible to faculty and students are the Center for Fast Laser Spectroscopy, the Center for Biological Mass Spectrometry with special expertise in biomolecule analysis by Electrospray Ionization MS. The Department has access to a wide range of NMR facilities including a 300 MHz unit on-site in the Department and a 500 MHz unit off-site. In the near future, access to an 800 MHz NMR unit will be provided off-site. The Department has also recently acquired a number of Silicon Graphics workstations for computation and molecular modeling studies.

Chemistry and Biochemistry Faculty Research Interests

Bioanalytical Chemistry

P. R. Banks: capillary electrophoresis, antibody probes, zeptomole protein assays and separations
S. R. Mikkelsen: biosensors, bioassays, bioanalytical chemistry, chemical sensors

Biochemistry

W. A. Findlay: recognition of target sequences by calmodulin: spectroscopic/molecular modeling studies
P. B. M. Joyce: intracellular protein targeting and enzymology of tRNA modification enzymes
M. J. Kornblatt: enolases: mechanism and sub-unit interactions
J. B. Powlowski: enzymology of bacterial degradation of aromatic compounds
J. Turnbull: mechanistic enzymology

Bioinorganic and Physical Inorganic Chemistry

J. A. Capobianco: laser spectroscopy, molecular dynamics, upconversion, fluorescence dynamics, Monte Carlo
A. M. English: metalloprotein control of biological redox processes; metalloproteins of pharmaceutical interest
N. Serpone: photochemistry, photocatalysis in heterogeneous media; photophysics of dyes, semiconductors; photoreactions in restricted geometries

Bioorganic and Physical Organic Chemistry

O. S. Tee: organic reaction mechanisms, catalysis, molecular recognition, transition state stabilization
Y. S. Tsantrizos: synthesis and biosynthesis of bioactive polyketides, peptides and oligonucleotide analogs

Materials and Solid State Chemistry

G. Y. M. Denes: materials chemistry, solid state chemistry, crystallography, Mössbauer spectroscopy, ionic conductors
D. B. Jack: computer simulations of the structure, phase transitions and reactions of adsorbed molecules
M. F. Lawrence: transducer materials, organic/inorganic semiconductors, energy conversion, sensor applications
R. Le Van Mao: heterogeneous catalysis, petrochemistry, zeolites, porous catalysts, selective adsorbents, ion-exchangers

More Information

Web Site: <http://artsci-ccwin.chem.concordia.ca/Chem/chem.html>
E-mail: courtts@vax2.concordia.ca
Address: Graduate Program Director
Department of Chemistry and Biochemistry
Concordia University, 1455 de Maisonneuve Blvd. W.
Montréal, Québec H3G 1M8
Telephone: (514) 848-3366
Fax: (514) 848-2868